

WHAT IS CLAIMED IS:

1. A heat-resistant glass fiber which has a composition comprising, substantially by weight %, 56 to 58.5 % of SiO₂, 12 to 17 % of Al₂O₃, 16 to 27 % of CaO, 1 to 9 % of MgO, 0 to 1 % of Na₂O and 0 to 1 % of K₂O as the entirety of the fiber and containing neither B₂O₃ nor F₂, and which has a surface layer portion made of a silicic glass having an SiO₂ content of at least 90 % by weight.
- 10 2. The heat-resistant glass fiber of claim 1, wherein the surface layer portion made of a silicic glass having an SiO₂ content of at least 90 % by weight has a thickness of 0.1 to 1.0 μ m.
- 15 3. The heat-resistant glass fiber of claim 1, wherein a difference ΔT between a spinning temperature which is a melting temperature of a glass having a viscosity of 100 Pa·s and a liquidus temperature is at least 30°C.
- 20 4. A process for the production of the heat-resistant glass fiber recited in claim 1, which comprises treating the surface of a glass fiber which has a composition comprising, by weight %, 56 to 58.5 % of SiO₂, 12 to 17 % of Al₂O₃, 16 to 27 % of CaO, 1 to 9 % of MgO, 0 to 1 % of Na₂O and 0 to 1 % of K₂O and containing neither B₂O₃ nor F₂, with a mineral acid.
- 25 30 5. The process of claim 4, wherein the treatment is carried out by immersing the glass fiber in an aqueous solution containing, as the mineral acid, 1 to 10 % by weight of at least one acid selected from HCl, H₂SO₄ or HNO₃ at a temperature of 0 to 90°C.